



QUARTERLY PROGRESS REPORT

Project Title:	Operational Improvements at Traffic Circles (Project 2002-16)		
RFP NUMBER:		NJDOT RESEARCH PROJECT MANAGER: Robert Sasor	
TASK ORDER NUMBER/Study Number: 129 / 4-26544		PRINCIPAL INVESTIGATOR: Kaan Ozbay (Rutgers) / George List (RPI)	
Study Start Date: 01/01/2002 Study End Date: 12/31/2004		Period Covered: 1 st Quarter 2004	

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase 1: Preliminary Literature Search	5%	50%	100%	5%
Phase 2				
Task 1: Literature Review	10%	25%	100%	10%
Task 2: Selection and Use of Computer Tool.	10%	100%	100%	10%
Task 3: Evaluation of Operational Alternatives.	30%	25%	50%	15%
Task 4: Safety Evaluation	20%	10%	20%	4%
Task 5: Cost – Benefit Analysis	10%	30%	30%	3%
Tasks 6: Final Recommendations	5%			
Tasks 7: Administration / Final Report.	10%	20%	20%	2%
TOTAL				49%

1. Progress this quarter by task:

- Task 1: This Task is complete. As part of this task, we also reviewed the following topics:
 - Available simulation models that can be used for the modeling of traffic circles
 - Related studies published in the open literature
 - Papers dealing with operation improvement applicable to traffic circles
 - Data needs for the validation and calibration of traffic simulation model to be used to model the selected circles
 - Safety Issues
- Task 2: This Task is Complete
- Task 3: We completed the first phase of data collection at, Collingwood and Asbury Circles
- Below a summary of our efforts in this quarter:
- Data extraction is completed for the Collingwood traffic circle. The extracted data include (i) vehicle counts at every 15 minutes with percentage of trucks and passenger cars, (ii) vehicle inter-arrival times, (iii) vehicle queue wait time before yield signs, (iv) vehicle wait times at yield signs, (v) gap acceptance/rejection times at yield signs.
- Same data extraction work for Asbury circle will be completed by the end of March, 2004.
- The PARAMICS model for the circle has been modified based on the traffic counts extracted from the data. Traffic signals have been added to the circle based on the signal timings provided by NJDOT.

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- Also using the API feature of PARAMICS, we have modified the vehicle gap acceptance function based on the extracted data. This modification resulted in more realistic traffic characteristics.
- Task 4: RPI team has submitted a technical memo, which explains their approach in assessing the safety improvements in the circle.
- RPI Team has also started analyzing the existing accident data.
- Task 5: A memorandum for the Cost-Benefit analysis is being prepared and will be discussed at the quarterly report meeting.

2. Proposed activities for next quarter by task

- On 02/25/2004, Rutgers and RPI had a conference call to discuss the next step for the project. Based on this conference, it has been decided that the following list is needed for next steps: (i) Accident data for Collingwood and Brooklawn circles. The data for Collingwood is especially important for RPI team to complete with their analysis. (ii) Traffic data collection will be performed for Brooklawn circle in the first week of April. (iii) If available, the turning counts at the junctions in the vicinity of the circles are required for the simulation models.
 - Continue data processing and analysis
 - Continue calibration of simulation models

3. List of deliverables provided in this quarter by task (product date)

4. Progress on Implementation and Training Activities

5. Problems/Proposed Solutions

We are still waiting for the rest of the accident data.

Total Project Budget	\$ 422,524
Modified Contract Amount:	
Total Project Expenditure to date	\$142,157
% of Total Project Budget Expended	34%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.